

Mr. Berment's US HEALTH – UNIT 1

NUTRITION & EXERCISE

The Body

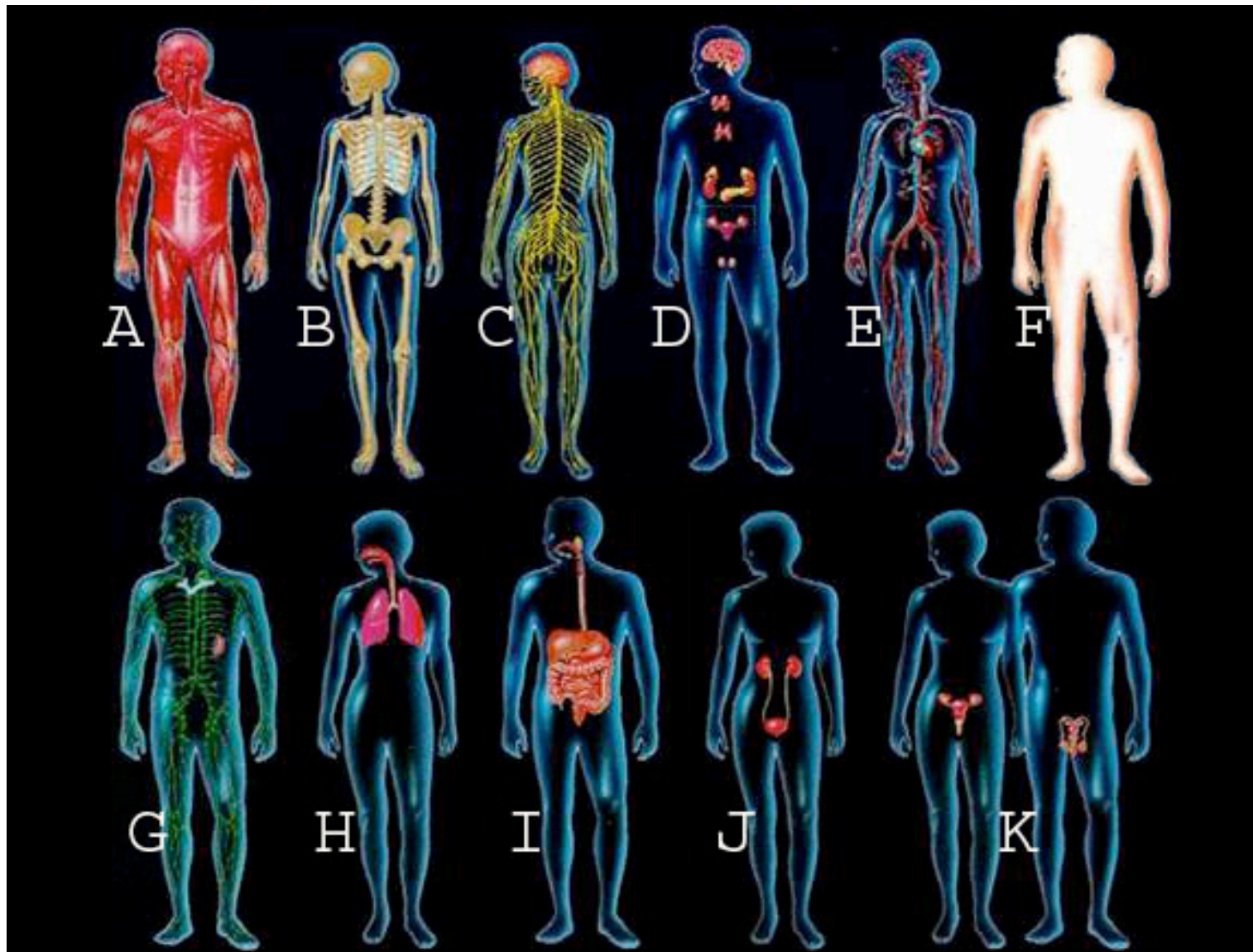


Systems

HUMAN BODY SYSTEMS

- How many types of systems are there in the body?
- There are 11 major organ systems in the human body:

HUMAN BODY SYSTEMS



HUMAN BODY SYSTEMS

- Muscular (A)
- Skeletal (B)
- Nervous (C)
- Endocrine (D)
- Cardiovascular (E)
- Integumentary (F)
- Lymphatic (G)
- Respiratory (H)
- Digestive (I)
- Urinary (J)
- Reproductive (K)

HUMAN BODY SYSTEMS

- **MUSCULAR SYSTEM** - The muscular system is responsible for the movement of the human body. Attached to the bones of the skeletal system are about 700 named muscles that make up roughly half of a person's body weight. Each of these muscles is a discrete organ constructed of skeletal muscle tissue, blood vessels, tendons, and nerves. Muscle tissue is also found inside of the heart, digestive organs, and blood vessels. In these organs, muscles serve to move substances throughout the body.

SKELETAL SYSTEM

- The skeletal system includes all of the bones and joints in the body. Each bone is a complex living organ that is made up of many cells, protein fibers, and minerals. The skeleton acts as a scaffold by providing support and protection for the soft tissues that make up the rest of the body. The skeletal system also provides attachment points for muscles to allow movements at the joints. New blood cells are produced by the red bone marrow inside of our bones. Bones act as the body's warehouse for calcium, iron, and energy in the form of fat. Finally, the skeleton grows throughout childhood and provides a framework for the rest of the body to grow along with it.

NERVOUS SYSTEM

- The nervous system consists of the brain, spinal cord, sensory organs, and all of the nerves that connect these organs with the rest of the body. Together, these organs are responsible for the control of the body and communication among its parts. The brain and spinal cord form the control center known as the central nervous system (CNS), where information is evaluated and decisions made. The sensory nerves and sense organs of the peripheral nervous system (PNS) monitor conditions inside and outside of the body and send this information to the CNS. Efferent nerves in the PNS carry signals from the control center to the muscles, glands, and organs to regulate their functions.

ENDOCRINE SYSTEM

- The endocrine system includes all of the glands of the body and the hormones produced by those glands. The glands are controlled directly by stimulation from the nervous system as well as by chemical receptors in the blood and hormones produced by other glands. By regulating the functions of organs in the body, these glands help to maintain the body's homeostasis. Cellular metabolism, reproduction, sexual development, sugar and mineral homeostasis, heart rate, and digestion are among the many processes regulated by the actions of hormones.

CARDIOVASCULAR SYSTEM

- The cardiovascular system consists of the heart, blood vessels, and the approximately 5 liters of blood that the blood vessels transport. Responsible for transporting oxygen, nutrients, hormones, and cellular waste products throughout the body, the cardiovascular system is powered by the body's hardest-working organ — the heart, which is only about the size of a closed fist. Even at rest, the average heart easily pumps over 5 liters of blood throughout the body every minute

CIRCULATORY SYSTEM

- The **circulatory system**, also called the **cardiovascular system** or the **vascular system**, is an organ system that permits blood to circulate and transport nutrients (such as amino acids and electrolytes), oxygen, carbon dioxide, hormones, and blood cells to and from the cells in the body to provide nourishment and help in fighting diseases, stabilize temperature and pH, and maintain homeostasis. The study of the blood flow is called hemodynamics. The study of the properties of the blood flow is called hemorheology.

INTERGUMENTARY SYSTEM

- The integumentary system is an organ system consisting of the skin, hair, nails, and exocrine glands. The skin is only a few millimeters thick yet is by far the largest organ in the body. The average person's skin weighs 10 pounds and has a surface area of almost 20 square feet. Skin forms the body's outer covering and forms a barrier to protect the body from chemicals, disease, UV light, and physical damage. Hair and nails extend from the skin to reinforce the skin and protect it from environmental damage. The exocrine glands of the integumentary system produce sweat, oil, and wax to cool, protect, and moisturize the skin's surface.

INTERGUMENTARY SYSTEM

- Here's an interesting web page for you to review.
- <http://www.innerbody.com/anatomy/integumentary-male>

LYMPHATIC SYSTEM

- The lymphatic system is a network of tissues and organs that help rid the body of toxins, waste and other unwanted materials. The primary function of the lymphatic system is to transport lymph, a fluid containing infection-fighting white blood cells, throughout the body.
- The lymphatic system primarily consists of lymphatic vessels, which are similar to the circulatory system's veins and capillaries. The vessels are connected to lymph nodes, where the lymph is filtered. The tonsils, adenoids, spleen and thymus are all part of the lymphatic system.

LYMPHATIC vs IMMUNE SYSTEM

- The immune and lymphatic systems are two closely related organ systems that share several organs and physiological functions. The immune system is our body's defense system against infectious pathogenic viruses, bacteria, and fungi as well as parasitic animals and protists. The immune system works to keep these harmful agents out of the body and attacks those that manage to enter.
- The lymphatic system is a system of capillaries, vessels, nodes and other organs that transport a fluid called lymph from the tissues as it returns to the bloodstream. The lymphatic tissue of these organs filters and cleans the lymph of any debris, abnormal cells, or pathogens. The lymphatic system also transports fatty acids from the [intestines](#) to the circulatory system.

LYMPHATIC vs IMMUNE SYSTEM

- **What is the difference between Immune System and Lymphatic System?**
- • The main functions of lymphatic systems are fluid recovery, immunity, and lipid absorption, whereas that of the immune system is to provide long term immunity and defend against foreign substances by activating immune responses.
- • Unlike the lymphatic system, immune system does not have specific anatomy.
- • Lymphatic system is an organ system, unlike immune system.
- • Lymphatic system is composed of lymph nodes, lymph vessels, and other related organs while the immune system is made up of basically B and T lymphocytes.
- • Immune system is mainly associated with nervous and endocrine systems, whereas lymphatic system is associated with the cardiovascular system.
- • The products of the immune system are transported in the lymphatic system.

RESPIRATORY SYSTEM

- The cells of the human body require a constant stream of oxygen to stay alive. The respiratory system provides oxygen to the body's cells while removing carbon dioxide, a waste product that can be lethal if allowed to accumulate. There are 3 major parts of the respiratory system: the airway, the lungs, and the muscles of respiration. The airway, which includes the nose, mouth, pharynx, larynx, trachea, bronchi, and bronchioles, carries air between the lungs and the body's exterior.
- The lungs act as the functional units of the respiratory system by passing oxygen into the body and carbon dioxide out of the body. Finally, the muscles of respiration, including the diaphragm and intercostal muscles, work together to act as a pump, pushing air into and out of the lungs during breathing.

DIGESTIVE SYSTEM

- The digestive system is a group of organs working together to convert food into energy and basic nutrients to feed the entire body. Food passes through a long tube inside the body known as the **alimentary canal** or the **gastrointestinal tract (GI tract)**. The alimentary canal is made up of the oral cavity, pharynx, esophagus, stomach, small intestines, and large intestines. In addition to the alimentary canal, there are several important accessory organs that help your body to digest food but do not have food pass through them.
- Accessory organs of the digestive system include the teeth, tongue, salivary glands, liver, gallbladder, and pancreas. To achieve the goal of providing energy and nutrients to the body, there are six major functions that take place in the digestive system:
 - Ingestion
 - Secretion
 - Mixing and movement
 - Digestion
 - Absorption
 - Excretion
- [The Digestive System](#)

URINARY SYSTEM

- The urinary system consists of the kidneys, ureters, urinary bladder, and urethra. The kidneys filter the blood to remove wastes and produce urine. The ureters, urinary bladder, and urethra together form the urinary tract, which acts as a plumbing system to drain urine from the kidneys, store it, and then release it during urination. Besides filtering and eliminating wastes from the body, the urinary system also maintains the homeostasis of water, ions, pH, blood pressure, calcium

REPRODUCTIVE SYSTEM (MALE)

- The male reproductive system includes the scrotum, testes, spermatic ducts, sex glands, and penis. These organs work together to produce sperm, the male gamete, and the other components of semen. These organs also work together to deliver semen out of the body and into the vagina where it can fertilize egg cells to produce offspring.

REPRODUCTIVE SYSTEM (FEMALE)

- The female reproductive system includes the ovaries, fallopian tubes, uterus, vagina, vulva, mammary glands and breasts. These organs are involved in the production and transportation of gametes and the production of sex hormones. The female reproductive system also facilitates the fertilization of ova by sperm and supports the development of offspring during pregnancy and infancy

Quick Quiz

- **Questions and Answers**

- **1.**

- How many body cavities do we have?

- A. Two
 - B. Three
 - C. Four
 - D. Five

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- **2.**

- A group of structures which function together as a unit to perform a definite job for the body

- A. Organ
 - B. Tissue
 - C. Cell
 - D. System

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- **3.**

- The system that exchanges oxygen with carbon dioxide is?

- A. Lymphatic
 - B. Digestive
 - C. Respiratory
 - D. Circulatory

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- **4.**

- What system is the one that serves for defense in the human body?

- A. Integumentary
 - B. Innate
 - C. Circulatory
 - D. Respiratory

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Quick Quiz

- 5.
- What is the system that transports nutrients, oxygen, and wastes?
 - A. Circulatory
 - B. Lymphatic
 - C. Digestive
 - D. Respiratory
- 6.
- What is the name for chemical messengers produced by glands?
 - A. Hormones
 - B. Gonads
 - C. Impulses
 - D. None of these
- 7.
- What is the system whose main function is to provide movement?
 - A. Skeletal
 - B. Muscle
 - C. Endocrine
 - D. Nervous
- 8.
- Where does the development of a child before birth takes place?
 - A. Ovaries
 - B. Uterus
 - C. Abdominal Cavity
 - D. None of these
- 9.
- How many bones do we have in the human body?
 - A. 206
 - B. 216
 - C. 226
 - D. 198
- 10.
- The sweat glands are part of the excretory system
 - A. True
 - B. False

SO ... DO YOU HAVE ANY
QUESTIONS FOR ME?

